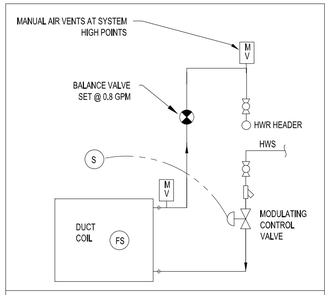
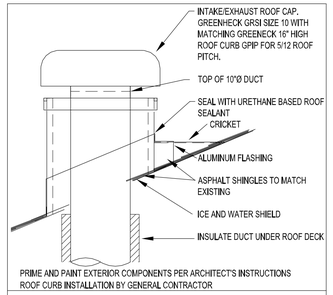
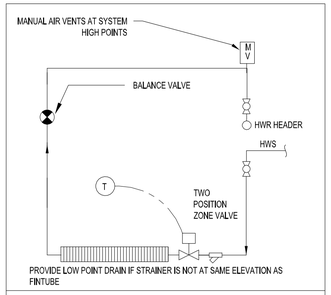


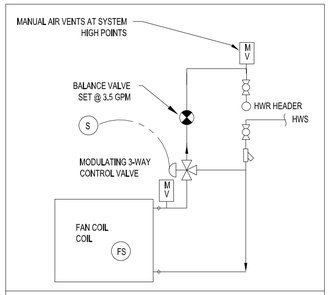
DUCT COIL DC-1 PIPING NTS



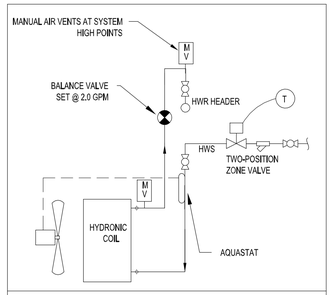
ROOF CAP INSTALLATION NTS



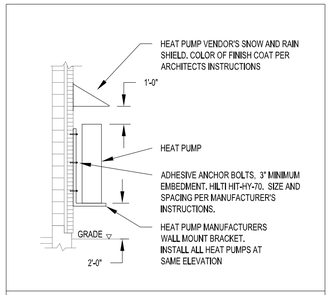
FINTUBE PIPING NTS



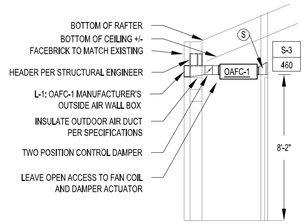
OUTSIDE AIR FAN COIL OAFC-1 PIPING NTS



CABINET UNIT HEATER PIPING NTS

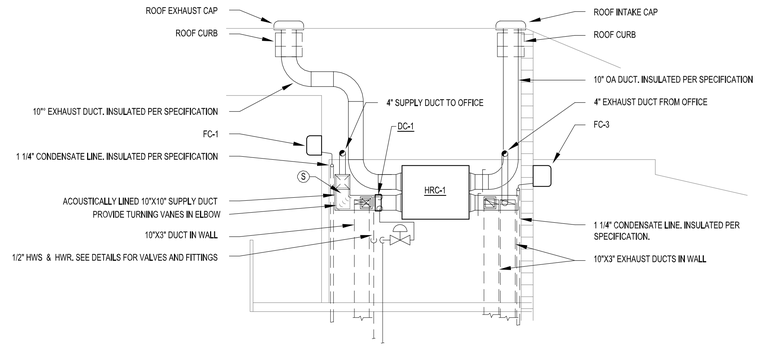


HEAT PUMP INSTALLATION NTS



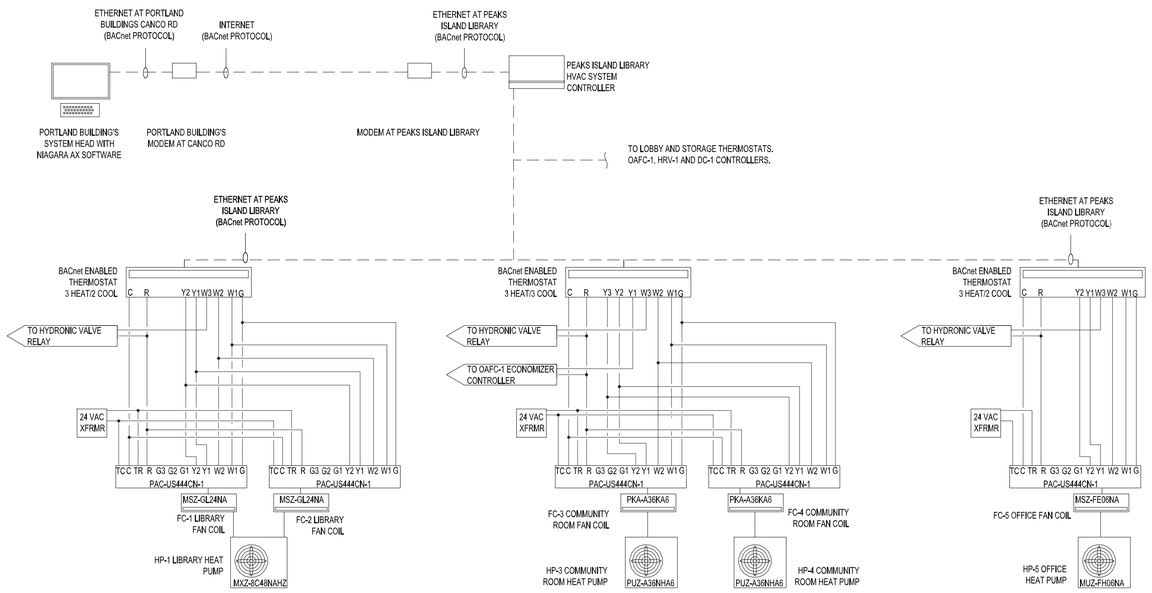
SECTION 1 - DRAWING M2.0

SCALE: 1/4"=1'-0"



SECTION 2 - DRAWING M2.0

SCALE: 1/4"=1'-0"



LIBRARY - SEQUENCE OF OPERATION:

WINTER OPERATION:
POWER DISCONNECTED TO HP-1. HYDRONIC HEAT RUNS OFF OF 3RD STAGE HEATING.

SPRING/FALL OPERATION:
1ST STAGE HEAT STARTS FC-1,FC-2 1ST STAGE HEAT
2ND STAGE HEAT STARTS FC-1,FC-2 2ND STAGE HEAT
3RD STAGE HEAT RUNS HYDRONIC
1ST STAGE COOLING STARTS FC-1,FC-2 1ST STAGE COOLING
2ND STAGE COOLING STARTS FC-1,FC-2 2ND STAGE COOLING

SUMMER OPERATION:
POWER DISCONNECTED TO BOILER AND CIRCULATION PUMPS
1ST STAGE COOLING STARTS FC-1,FC-2 1ST STAGE COOLING
2ND STAGE COOLING STARTS FC-1,FC-2 2ND STAGE COOLING

COMMUNITY ROOM - SEQUENCE OF OPERATION:

WINTER OPERATION:
POWER DISCONNECTED TO HP-3, HP-4. HYDRONIC HEAT RUNS OFF OF 3RD STAGE HEATING.

SPRING/FALL OPERATION:
1ST STAGE HEAT STARTS FC-3,FC-4 1ST STAGE HEAT.
2ND STAGE HEAT STARTS FC-3, FC-4 2ND STAGE HEAT
3RD STAGE HEAT RUNS HYDRONIC
1ST STAGE COOLING STARTS OAFC-1 ECONOMIZER FUNCTION (IF ENABLED)
2ND STAGE COOLING STARTS FC-3, FC-4 1ST STAGE COOLING
3RD STAGE COOLING STARTS FC03,FC-4 2ND STAGE COOLING

SUMMER OPERATION:
POWER DISCONNECTED TO BOILER AND CIRCULATION PUMPS
1ST STAGE COOLING STARTS OAFC-1 ECONOMIZER FUNCTION (IF ENABLED)
2ND STAGE COOLING STARTS FC-3, FC-4 1ST STAGE COOLING
3RD STAGE COOLING STARTS FC03,FC-4 2ND STAGE COOLING

OFFICE - SEQUENCE OF OPERATION:

WINTER OPERATION:
POWER DISCONNECTED TO HP-5. HYDRONIC HEAT RUNS OFF OF 3RD STAGE HEATING.

SPRING/FALL OPERATION:
1ST STAGE HEAT STARTS FC-5 1ST STAGE HEAT
2ND STAGE HEAT STARTS FC-52ND STAGE HEAT
3RD STAGE HEAT RUNS HYDRONIC
1ST STAGE COOLING STARTS FC-5 1ST STAGE COOLING
2ND STAGE COOLING STARTS FC-5 2ND STAGE COOLING

SUMMER OPERATION:
POWER DISCONNECTED TO BOILER AND CIRCULATION PUMPS
1ST STAGE COOLING STARTS FC-5 1ST STAGE COOLING
2ND STAGE COOLING STARTS FC-5 2ND STAGE COOLING

HEAT PUMP CONTROLS NTS

HVAC SEQUENCE OF OPERATIONS:

HYDRONIC HEAT BOILER AND CIRCULATION PUMPS SHALL BE MANUALLY ENABLED BY PORTLAND BUILDINGS.

HEAT PUMPS SHALL BE MANUALLY ENABLED BY PORTLAND BUILDINGS.

THERMOSTATS SHALL HAVE LOCAL SETPOINT OVERRIDES SET FOR A 2 HOUR (ADJ) DURATION.

LIBRARY:
HEAT PUMP AND FAN COILS SHALL OPERATE OFF OF THERMOSTAT'S 1ST & 2ND STAGE OF HEATING AND 1ST AND 2ND STAGE OF COOLING.

HYDRONIC HEAT OPERATE OFF OF THERMOSTAT'S 3RD STAGE OF HEATING.

CUH-1 FAN SHALL OPERATE WHEN AQUASTAT SENSES HOT HYDRONIC WATER.

COMMUNITY ROOM:
HEAT PUMPS AND FAN COILS SHALL OPERATE OFF OF THERMOSTAT'S 1ST & 2ND STAGE OF HEAT AND 2ND AND 3RD STAGE OF COOLING.

HYDRONIC HEAT SHALL OPERATE OFF OF THERMOSTAT'S 3RD STAGE OF HEATING.

OUTDOOR AIR DAMPER SHALL OPEN AND OUTDOOR AIR FAN COIL (OAFC-1) SUPPLY FAN SHALL RUN UPON ACTIVATION OF ECONOMIZING FUNCTION OR CALL FOR VENTILATION AIR.

OAFC-1 HYDRONIC VALVE SHALL MODULATE TO MAINTAIN 70°F (ADJ) DISCHARGE TEMPERATURE AND CIRCULATION PUMP SHALL RUN WHEN VENTILATION FUNCTION IS ACTIVATED.

OAFC-1 ECONOMIZING FUNCTION SHALL BE ACTIVATED WHEN OUTDOOR AIR TEMPERATURES ARE BETWEEN 50°F (ADJ) AND 65°F (ADJ) AND OUTDOOR ENTHALPY IS LESS THAN 25 BTU/LB AND THERMOSTAT CALLS FOR 1ST STAGE COOLING.

OAFC-1 VENTILATION AIR FUNCTION SHALL BE COMMENCE WHEN CO2 SENSOR SENSES LEVELS ABOVE 700PPM (ADJ).

OAFC-1 FREEZESTAT SHALL STOP SUPPLY FAN, CLOSE OUTDOOR AIR DAMPER AND OPEN HYDRONIC VALVE IF DISCHARGE TEMPERATURE FALLS BELOW 40°F

OFFICE:
HEAT PUMP AND FAN COIL SHALL OPERATE OFF OF THERMOSTAT'S 1ST AND 2ND STAGE OF HEAT AND 1ST AND 2ND STAGE OF COOLING.

HYDRONIC HEAT OPERATE OFF OF THERMOSTAT'S 3RD STAGE OF HEATING.

LOBBY:
LOBBY THERMOSTAT SHALL OPEN ZONE VALVE AND UPON CALL FOR HEAT.

CUH-2 FAN SHALL OPERATE WHEN AQUASTAT SENSES HOT WATER.

LIBRARY STORAGE:
LOBBY THERMOSTAT SHALL OPEN ZONE VALVE UPON CALL FOR HEAT.

HRV-1:
HRV-1 SHALL OPERATE DURING SCHEDULED OCCUPIED HOURS.

HRV-1 SHALL OPERATE UPON MOTION SENSE IN EITHER RESTROOM AND SHALL BE SECURED 15 MINUTES AFTER FINAL MOTION SENSE.

DC-1:
HYDRONIC VALVE FOR DC-1 SHALL BE ENABLED AND CIRCULATION PUMP ACTIVATED WHENEVER HRV-1 IS OPERATING. HYDRONIC VALVE SHALL MODULATE TO MAINTAIN 75° SUPPLY AIR DISCHARGE TEMPERATURE. COIL FREEZE-STAT SHALL STOP SUPPLY FAN AND OPEN HYDRONIC VALVE UPON AIR TEMPERATURE BELOW 40°F.

CIRCULATING PUMP #1:
CIRCULATING PUMP SHALL OPERATE WHENEVER ANY OF THE THERMOSTATS OR UNIT CONTROLLERS CALL FOR HYDRONIC HEAT.

12-21-16 Issued for Review
4-12-17 Issued for Bidding

STATE OF MAINE
ANDREW W. HOLBROOK
No. 9103
4/12/2017
LICENSED
PROFESSIONAL ENGINEER
Date: 04/25/17

ARCHITECT:
REED & CO. ARCHITECTURE
46 CUMBERLAND AVE
PORTLAND, ME 04101
207 871 5678

INTERIOR DESIGNER:
COLE DESIGN
PO BOX 361
KITTERY, ME 03904
207 653 0083

STRUCTURAL ENGINEER
SHELLEY ENGINEERING
PO BOX 1030
GRAY, ME 04039
207 657 8031

MECHANICAL ENGINEER:
HOLBROOK ENGINEERING
52 HEATH RD
SACO, ME 04072
207 283 9127

ELECTRICAL ENGINEER:
BARTLETT DESIGN
942 WASHINGTON STREET
BATH, MAINE 04530
207 443 5447

PROPOSED IMPROVEMENTS

PEAKS ISLAND COMMUNITY CENTER & LIBRARY

Title:
HVAC DETS

Sheet No.
M3.1

Scale: NONE
Date:
Revised: